

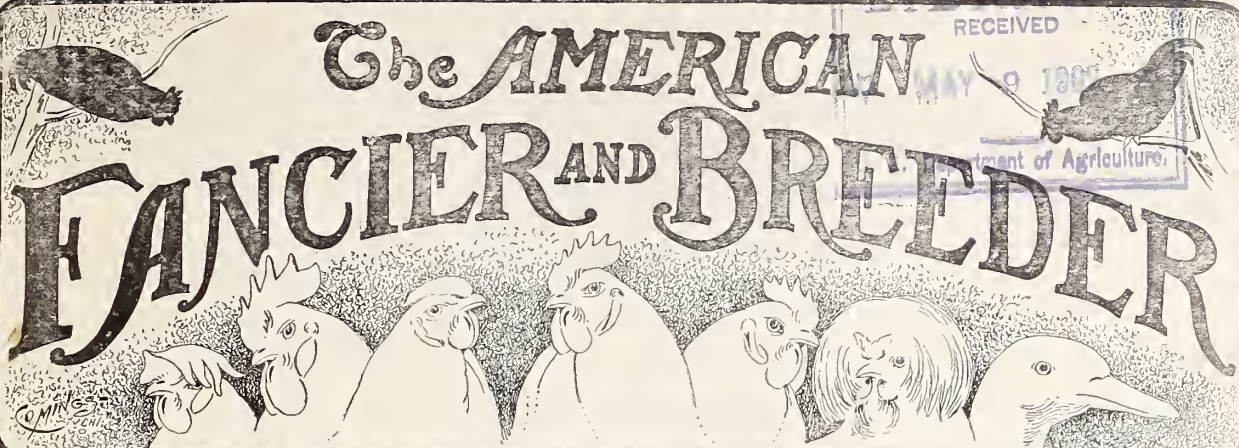
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The AMERICAN FANCIER AND BREEDER



Vol. 19.

De Kalb, Illinois., April, 1902.

No. 4.



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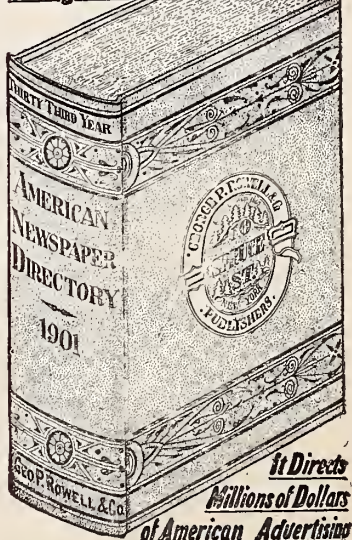
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Vol. 19

DE KALB, ILLINOIS, APRIL, 1902.

No. 4.

Pasture Weeds, Their Prevention and Eradication.

EXPERIMENT STATION, MANHATTAN, KAN.,
MARCH 25, 1902.

There is a constant demand nowadays for information concerning measures for keeping weeds out of grazing land. Weeds are generally plants that have become adapted to living in many climates, on many soils and under very various conditions. Some of them are truly cosmopolitan, being found in almost all countries. Their transportation to other countries is usually due to man, a very common means of distribution being through accidental mixture with grain, vegetable or grass seed. Railroads, particularly through the freight trains, carry seeds of weed plants from place to place. In such ways weeds suddenly come to appear in new and unexpected regions.

The dominant vegetation existing in any section of country, if left to itself, usually repels invaders. The reason that certain kinds of plants only are found growing predominantly anywhere is because, for the time being, they are best fitted to survive under local conditions. Those less well fitted are crowded out, and perish. In an old plant region, as a forest or prairie, vegetation of a particular sort has established itself as the result of centuries of competition with other plants contesting for the same space. Seeds of invading species, however, may lie dormant for some time in the soil, awaiting the clearing of the land to germinate and grow. Notice the new plants that appear where land is cleared of trees or sod and left to itself.

So long as the conditions in nature surrounding the wild prairie grass remain the same, they will continue to grow in about the same proportion and to about the same extent. Man, however, changes natural conditions violently. By breaking sod and putting in crops he opens places which afford room for strange plants, weeds, the seeds of which are carried thence to neighboring grazing land. Even then they will not drive out the wild grasses if the latter are left to themselves. On the contrary, if a farm is abandoned, weeds may riot for a few years on the broken land, but the sod retakes the soil eventually in the prairie regions, and the weeds are crowded out.

The most common cause of weed invasion of native pastures is overpasturing, whereby the wild grasses are kept down so that they cannot compete with the weeds. The latter

being unpalatable usually are left undisturbed by the stock. Sometimes there are introduced weeds never found on the prairies, as iron-weed, snow-on-the-mountain or milk-weed, horse-weed and thistle. Others are tough prairie perennials growing among the grasses, but not spreading greatly unless the latter are kept down.

Prevention of weed-invasion of pastures is generally perfectly possible by grazing fewer head per acre. Compare the number of weeds in a prairie pasture with those in an adjoining piece of similar land not grazed but kept to be mowed for hay. What number of stock per acre can be safely grazed depends on the region. In the "short-grass" country fifteen to twenty acres per head must be allowed. In central or eastern Kansas two and one-half acres per head is perhaps a limit. Every farmer can tell by observation when weeds are coming in. If so, it is a sign to reduce the number of stock per acre. No man can afford to raise stock in such numbers that they use up the capital itself (the land) by killing out the pasture grasses which make it valuable, instead of consuming the interest only.

Eradication of weeds already present in pastures depends on the particular case. Annual weeds can be killed out by mowing before seeding. This may have to be repeated several times during the growing season, as many of them will send up new sprouts. In the case of biennials or perennials with tap-roots, cutting the latter under ground and beneath the "crown" is effective. Perennials like the bind-weed, which spread by underground stems are extremely difficult to deal with because every bud on such a stem is capable of growing into a new plant. Plowing under simply spreads the plant by cutting the propagating stems and scattering the pieces. No very satisfactory way of eradicating weeds of this kind can be given that will apply for all cases and conditions. A straw mulch, by excluding the light, will sometimes kill them. Common salt applied to the soil is effective, and arsenite of soda, one pound dissolved in eight quarts of cold water, is recommended. This can be obtained of the wholesale druggists at ten cents per pound. Of course, any chemicals that kill weeds will kill all the other vegetation for several months. Chemical methods of weed extermination, then, should be used only as a last resort and under expert advice.

All bulk seed purchased should be carefully cleaned before sowing—H. F. ROBERTS.

A Few Points on Running an Incubator.

For the benefit of those who are going to run an incubator for the first time this season, I will give some of my experience. I have been running incubators for several years and may be able to give a few points that will help some one.

First, in purchasing an incubator, be sure to get one of a good make. There are many kinds on the market that are all right. After you get your incubator, start it, and run it for several days before you put in your eggs and see the regulator works all right. See that your thermometer is correct, as this is very important. There are several ways of testing them, one is to get a physician's thermometer and put them both in water at about 103 degrees and see if they register the same. After you have everything in running order, put in your eggs, which should be fresh, not over ten days old, of even size, and of one breed if possible, as all breeds do not hatch in the same length of time. The smaller the breed the quicker they hatch and to get good results all should hatch about the same time. When you put the eggs in, they will lower the temperature, but it will come up in a half day or so. See that your regulator does not let the temperature go above 103 degrees. I would prefer less heat rather than more, would have it at 102½ degrees the first week than have it get above 103, as a hen never gets the eggs above 103, but often below part of the time, as she gets off to eat, and it takes her several hours to get the temperature of the eggs back to 103.

After the second day turn the eggs twice a day, about the same time each day, and about the eighth day test the eggs and take out all the infertile ones. After a little experience you can test them earlier. After you have taken out all the infertile eggs, at least all that shows very plainly what they are, pick out several that show strong chicks mark them and keep the thermometer on one or two of these all of the time and test these every few days to see if they have growing chicks in them, for if you should happen to have your thermometer on an infertile egg or on one with a dead chick in it, your fertile eggs may get up to 106 and still your thermometer will only show 103, or about that. This is one thing a great many fail on, by not having the thermometer on fertile eggs.

About the tenth day you may have to change your regulator some, as the heat of

the chicks begins to be noticeable. After the eggs have been in a week cool them once each day, until the thermometer runs down to about 70 or 80, as this will make your chicks stronger. Don't be afraid to let them cool, for one of the best hatches I ever had was when I cooled them the most.

As to moisture, you can tell by watching the air cells in the eggs, but I don't think, as a general rule, you will need much moisture unless you have a very dry place for your incubator.

When the chicks begin to peep, which will be about the twentieth day, don't turn the eggs any more and do not open the door to the egg chamber, if possible, until they are nearly done hatching, then open and there may be a few that may need helping out of the shell, but these hardly ever amount to much.

I consider 70 per cent a good hatch, and here are a few reasons why the chicks die in the shell. Eggs were too old, hens too fat, too much heat during incubation, too much moisture, letting the heat run down while hatching, [especially by opening the door, which makes too sudden a change,] and the parent stock not being in a healthful condition.—PAUL B. HARSHMAN in *Inland Poultry Journal*.

PRESERVING EGGS.

In the last three or four years the method of preserving eggs with a solution of water-glass has often been tested both in a practical way and in laboratories. The North Dakota Experiment Station has been especially interested in the problem. In these experiments, a 10 per cent solution of water-glass preserved the eggs so effectually that "at the end of three and one-half months eggs that were preserved the first part of August still appeared to be perfectly fresh. In most packed eggs after a little time the yolk settles to one side, and the egg is then inferior in quality. In eggs preserved for three and one-half months in water-glass, the yolk retained its normal position in the egg, and in taste they were not to be distinguished from fresh store eggs. Again, most packed eggs will not beat up well for cake making or frosting, while eggs from a water-glass solution seemed quite equal to the average fresh eggs of the market."

Water-glass, or soluble glass, is the popular name for potassium silicate or for sodium silicate, the commercial article often being a mixture of the two. The commercial water-glass is used for preserving eggs, as it is much cheaper than the chemically-pure article which is required for many scientific purposes. Water-glass is commonly sold in two forms, a syrup-thick liquid, about the consistency of molasses, and a powder. The thick syrup, the form perhaps most commonly seen, is sometimes sold wholesale as low as 1 $\frac{3}{4}$ cents per pound in carboy lots. The retail price varies, though ten cents per pound, according to the North Dakota Experiment Station, seems to be the

price commonly asked. According to the results obtained at this station a solution of the desired strength for preserving eggs may be made by dissolving one part of the syrup thick water-glass in ten parts, by measure, of water. Much of the water-glass offered for sale is very alkaline. Such material should not be used, as the eggs preserved in it will not keep well. Only pure water should be used in making this solution, and it is best to boil it and cool it before mixing with the water-glass. The solution should be carefully poured over the eggs packed in a suitable vessel, which must be clean and sweet, and if wooden kegs or barrels are used they should be thoroughly scalded before packing the eggs in them. The packed eggs should be stored in a cool place. If they are placed where it is too warm silicate deposits on the shell and the eggs do not keep well. The North Dakota Experiment Station found it best not to wash the eggs before packing, as this removes the mucilaginous coating on the outside of the shell. The station states that one gallon of the solution is sufficient for fifty dozen eggs if they are properly packed.

It is, perhaps, too much to expect that eggs packed in any way will be just as satisfactory for table use as the fresh article. The opinion seems to be, however, that those preserved with water-glass are superior to most of those preserved otherwise. The shells of eggs preserved in water-glass are apt to crack in boiling. It is stated that this may be prevented by puncturing the blunt end with a pin before putting it into the water.

THE RATION FOR EGGS.

How the Writer of a Prize Article Feeds His Hens.

Mr. James Shackleton won first prize for an article on "How to Get Fertile Eggs" offered by *American Poultry Journal*. Upon request of the editor Mr. Shackleton offered the following on how to feed to get eggs:

Our Wyandottes are fed balanced rations so compounded that the total foods served each day have approximately one to four nutritive ratio, outside forage being disregarded in the balancing, because it is usually perfectly balanced in itself. By a nutritive ratio of one to four we mean that the carbohydrates and fats in the food are four times the weight of the protein and also that the rations are made up from foods of animal, grain or vegetable origin. The animal foods used are animal meals, fresh raw cut bone. The grain foods used are wheat, corn, oats, bran and other by-products of milling processes. Of these we buy and use whatever appears to be cheapest at any particular time, having regard to its average analysis, and we have never found any other reason to prefer any one grain or mill product over another. The vegetable foods in summer are refuse cabbage leaves, lettuce, turnip tops or anything similar that happens to be

RIPANS

I had nervous indigestion and a general derangement of the whole system. It has been a continual torture for 12 years. My blood became poor and at times my toe and finger nails would be diseased. After eating I would sit down and put my feet on something to keep them from swelling, and at times would take off my shoes for the misery I had. Whenever I experience anything to remind me of past aches I cannot be too elated to tell what Ripans tablets have done for me. I still take one now and then, because I know how bad I have been. They were just what I needed.

At Druggists.

The Five-Cent packet is enough for an ordinary occasion. The family bottle, 60 cents, contains a supply for a year.

available; in winter, anything procurable of this nature, but our main reliance is on clover meal.

We feed only twice per day all the year round, with an occasional meal at midday in the coldest and stormiest weather. The working meal is whole grain scattered on the ground in summer, scattered in scratching shed litter in winter. The evening meal is moistened mash of milling products, animal food and vegetable food.

As to quantity of food, little useful can be said, for size, age and breed call for great changes in that respect, and even another flock of Wyandottes might do well on different quantities than we serve. The only measure of quantity we have is to get the birds into laying condition and keep them so, neither gaining or losing weight. The quantity we serve for the morning meal varies between one quart in summer, one and one-half quarts in moderate winter to two quarts in coldest weather. The evening mash before moistening varies between two quarts in summer, two and one-half quarts in moderate winter to three quarts in coldest weather. These quantities are for twenty-five adult Wyandottes, all females laying.

With these rations we find it easy to get at least 200 eggs per year per hen, provided they are not permitted to spend much time hatching. Of course other matters of maintenance are imperative as well as proper rations.

A Brooder Attachment.

In early spring the brooder chicks can be let out upon the ground and yet be protected from the cold winds by a very simple attachment. A box without top or bottom is hooked to the side of the brooder, an opening being cut in the side where the door of the brooder comes. The top of the attachment is covered with coarse cotton cloth, or a sash may be used. The cloth lets in fresh air and the sun's rays, but protects the chicks from the cold winds.

SOME POULTRY RAISING ADVICE.

A Few Pointers to Beginners.

Having been like others invited to write your valuable paper on matters pertaining to live stock, I will address a few lines to your readers on that branch of "live stock" which is rapidly coming to the front as a profitable industry—I mean poultry raising.

For years I raised the "mixed" variety and sold them to the "chicken-man" for a few cents a pound, but this was before the visions of blue ribbons flitted across my mind (I have recently taken many prizes with my exhibits.)

To make a plea for the better poultry production is why I write you. In this connection allow me to say that the male is half the flock, and let me caution every person who intends to follow poultry raising intelligently to think of this. Good pure roosters can be obtained for one dollar that will increase the size, health and egg producing properties a hundred times.

The qualifications necessary, however, to make poultry raising pay are to live for the work, perseverance in your efforts, patience and attention to the smallest details. By managing business thus, those who raise poultry never need be without spending money.

As a rule beginners are at a loss what breed to select. For my own part I will say that after an experience of many years, during which I have tried most every breed, I have settled on the Barred Plymouth Rocks and White Crested Black Polish. The first is a fine all purpose breed and the other a fine egg producing fowl.

Free range and plenty of good feed and fresh water are essential for, and will work wonders in the raising of chickens and turkeys. I have Barred Plymouth cockerels that weigh eight pounds at five months old and Mammoth Bronze Turkeys that weighed twenty-eight pounds the middle of November.

If the reader is interested in poultry raising, but has never given it proper attention, let he or she take advice from this and improve the flock with a thoroughbred male, and the result that will be attained will be astonishing. It will also become a fact that poultry raising will be found to add considerable to the maintenance produced from the production of four-footed live stock.—Poultry Culture.

BUYING EGGS.

The season for buying eggs for hatching is on and a good many will buy eggs for hatching this year for the first time. The beginner is likely to expect too much from eggs that are shipped from any considerable distance and have been subjected to varying degrees of heat and cold.

In a large percentage of cases eggs hatch well even after being shipped long distances but there are times when a part of the eggs

arrive in such condition that they will not hatch. and the beginner who expects twelve chicks from thirteen eggs, is often disappointed, and too often calls the seller a fraud, and writes him to that effect.

The writer has bought a great many settings of eggs from distant breeders and has never had a single real poor hatch, except when he bought of unreliable breeders, and these have been but two.

The question of how many should be considered a good hatch has often been brought up. If we get six chicks we call it a good hatch, although the exception noted, we do not remember to have gotten so few from any one setting.

Six good chicks are worth more than any breeder asks for a clutch of eggs. It is safe to say that taking well-bred fowls as they come three chicks from any given clutch of eggs will be worth when grown more than the cost of the clutch of eggs and the cost of raising all the chicks hatched from it.

The buyer should exercise reasonable care and take reasonable precautions to secure a good hatch. When the eggs are received they should be set away in a moderately cool place and allowed to remain there undisturbed for at least twenty-four hours.

Then they should be put under a reliable hen in a good nest and the hen should be given good care. If they are to put into an incubator the eggs should not be expected to hatch as large a percentage as those that were produced at home, for they are usually older and have been subjected to the perils of a railway trip.

If these precautions are taken in nine times out of ten six or more chicks will be hatched from a clutch of eggs, and the buyer should feel that he has received good value for his money.—Commercial Poultry.

BETTER TABLE POULTRY

There has been such a wonderful advance in the poultry world during the last ten years, especially in the line of fine plumage and laying quantities of all kinds of fowls. But did you ever think how little real improvement there is in the table qualities of the same fowls?

I cannot see that there is any more meat on the carcass of the Plymouth Rock, Wyandottes and Leghorns that are so popular, than there was when I first handled them. The Cornish Indian Games, which are so popular in the east are nearly perfect. But the public in general is not acquainted with this comparatively new breed. And until they; there is a great field open to the up-to-date poultrymen who are not afraid to spend time and money developing some of the American breeds in this neglected quality. What is wanted is a quick-maturing, plump, meaty fowl, one that is not over one-half fat, bone and feathers—otherwise there is too much waste.

How far below the wild birds, which are so closely related to the domestic, are the best breeds of today when compared, for the

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table. The grouse, partridge and quail which are at a disadvantage all their lives, starved and chased, yet they have actually nearly one-half more meat on their small-boned bodies and no fat to spoil the flavor of the meat.

It will be a hard task to ever equal them, but there can be much done to improve our best breeds of poultry in this respect.—D. Y. Gibbs, in Poultry Herald.

CARELESS BREEDERS.

A season in the show room will convince any fancier that too many breeders are careless in the matter of attention to their birds during the time between show seasons. They are busy enough just before show time in trying to get their birds in shape for exhibition, but neglect the little details that if attended to along during the year would often save a few points in scores.

It is a small matter to keep watch of the condition of legs, etc., and when they show signs of roughness, etc., a little attention at that time will keep them in good condition. We are apt to become neglectful after the show season; when we should be enthusiastic enough to give all necessary attention to those matters that will count in the show room the next season.

FEEDING MEAT.

When feeding meat to hens do not use that portion which is fat. The object in feeding meat to hens is to supply them with nitrogen and not fat, as the grain contains all the fat and starch required for them. If the fat is fed it does not assist in any manner to provide material for eggs, but rather retards than assists laying. The cheap portions of beef, such as the neck, are better for fowls than the choicest fat and lean steaks. Blood is excellent for fowls, and can be easily fed to them by mixing it with their soft food. The ordinary ground meat contains both fat and lean, and sells for about three cents a pound; but as the meat is subjected to heavy pressure at a high temperature most of the fat is removed.

Sell or kill off the surplus stock. Feed of all kinds is too high priced now to carry them over profitably. In other words, watch the corners, for there is lots of ways the profit can slip out of the poultry business; if it is not looked carefully after. Spade or plow up the runs, the fowls will enjoy them better, and if they throw in and cover up a few handfuls of oats or other grain, it will put the chickens to scratching, and that will help to fill up the egg basket, as well as keep the fowls healthy.

The AMERICAN FANCIER and BREEDER

Published the 15th of each month.

By The AMERICAN FANCIER and BREEDER PUB., CO.

DEKALB, ILL., APRIL, 1902.

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The Fourth Annual Exhibition of the Walla Walla Poultry and Pet Stock Association will be held December 16 to 20 inclusive, 1902 at Walla Walla, Wash. Mr. F. W. Hitchcock, of Denver, will act as Judge.

The Richland County Poultry Association will hold its Third Annual Show at Olney, Ill., Jan. 7, 8, 9 and 10, 1903. Chas Mc Clave, Judge. The officers are; N. O. Morsé, Pres., Mrs. E. E. Edwards, Vice Pres., Geo. B. Hall, Asst. Sec'y., all of Olney. Edw. E. Dalton, Sec'y. Treas.

We wish to call the attention of our readers to the Donley Disinfectant as advertised in this issue, manufactured by H. A. Stone. It is one of the best lice destroyers made. A trial will make you take more.

BEAUTIFYING THE HOME GROUNDS.

The old-fashioned gardens of half a century ago, with no thought of effect, gave decorative plants their proper positions by relegating them to some corner or border location. Often times they were planted near an old well sweep with a clump of trees beyond, simply because they grew so thrifty there under the dashes from the old well bucket. Naturally they form a picture still fresh in the memory of many a wanderer from the old homestead, who is now shut in by walls of brick and stone. Some of the pleasing effects that one can arrange in planning the home garden are indicated in the

April DELINEATOR, where the directions are given by a well-known authority on gardening.

See Montgomery Ward & Co.'s advertisement in this issue and send for their 1,000 page catalogue which is sent for 15 cents if you fill out the blank in their ad.

You must be interested in the work if you succeed. Without interest, success is never won. But then you should love the work and if you do, then you will be interested in it.

Fresh water and dry feed are best for little chicks. Sloppy dough will serve them as it would you, so do not inflict it upon them.

Don't think because you can't have fancy poultry or can't care for it according to the fancier's standard you must be without eggs

The Market and the Supply.

In winter the egg markets in the cities are never supplied with fresh eggs. Even in summer, when the prices are sometimes low, the cost of keeping the fowls is greatly decreased. In fact, on the farm the cost is barely noticeable and the egg production steadily increases. It is a great mistake to select the best pullets and send them to market in the fall and early winter, and reserve the culls and old hens, and from them expect the egg-supply during the winter. These fowls, if confined for a few days in a fattening coop, can be made ready for market, and then farmers can retain the true egg-producers at home. Of course, it is expected that every one will be humane enough to prepare warm and dry quarters for their poultry, besides see that they have a proper allowance of food, and always a supply of fresh water, for in winter all domesticated members of the barnyard are forced to depend on man for proper care and if one is not willing or humane enough to attend to this duty, by no means undertake the raising of fowls as it would be but to inflict needless cruelty on the lower animals which are under his care, and which it is the duty of all to protect. And more, our farmers may not only supply our own markets, but provide eggs for export. It is said that the egg supply from our three largest egg-producing States is not sufficient to supply the New York market alone. Remember the number of large cities and towns we have, and if this be true, consider how small the egg-production of this country really is. We should depend upon ourselves, keep this amount of money at home and benefit our country. Poultry raising and the production of eggs pay.

To Cure Egg Eating.

Almost every one has had trouble with hens eating eggs. Any one who has learned much from it will be glad to learn any way to prevent or cure it. A poultry man of experience says:

There is nothing more provoking and more unprofitable than a flock of hens which have acquired the habit of eating their eggs. This is a habit more easily prevented than cured. Give the hens plenty of exercise with a variety of food. Gather the eggs frequently, provide sufficient resting places and keep one or more porcelain eggs upon the floor of the house. Dark nests are advisable, and a meat diet is excellent.

To cure the habit provide dark nests and add meat to their food. Remove the end from several eggs and pour out the contents. Make a mixture of flour, ground mustard and red pepper, adding a little water to hold the material together. Fill the shells and place upon the floor of the hen house. The hens will make a wild scramble for these prepared eggs, will gobble down some of their contents, and will soon be gasping with open beaks. Follow up this treatment until the hens refuse to touch an egg. It seems, and perhaps is somewhat severe, but no permanent ill effects will follow. The hens will soon learn that eggs are not so palatable as they regarded them, and will desist from the bad habit. Positive cures have followed this method.—Tri-State Farmer.

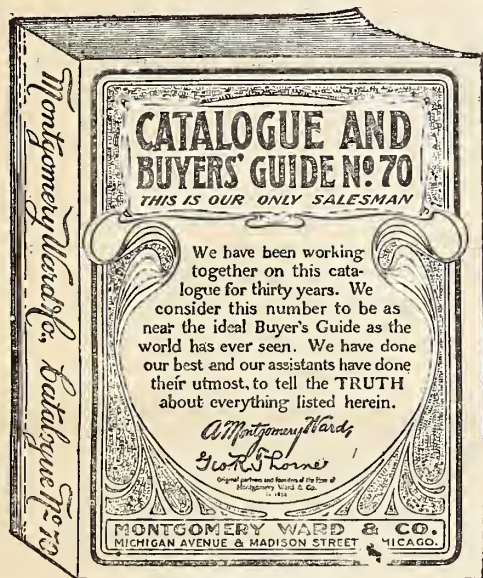
Time Required to Establish Fertility in Eggs.

The following experiment was undertaken to determine how soon after mating eggs become sufficiently fertile to yield chicks. For this purpose there were selected 20 Barred Plymouth Rock hens one year old, that had been laying heavily during the five to seven months preceeding, but had not been in the company of male birds since they were young chicks. Late on the evening of May 25, a cockerel 12 months old was placed in the pen with them and kept there until the close of the test. The hens laid each succeeding day until June 6th were incubated.

The eleven eggs laid May 26th were all removed after having been in the incubator eight days. Eight of them were clear and the three others showed very light traces of fertility. At the same time the eight eggs laid May 27th were examined and three of them showed clear, three were slightly cloudy and two had good strong centers and radiating lines. From these eggs two good strong chicks were hatched on the twentieth day of incubation. The best results were obtained from the eggs laid June 2nd, eight days after the introduction of the male bird. From the ten eggs laid that day, ten good chicks were hatched and two eggs were completely infertile.

This test shows that eggs become fertile very soon after mating commences. As it was after dark when the cockerel was put in the pen with the hens, it is not at all probable that he mated with any hen until the next morning, May 27th, not more than forty hours after mating, yielding vigorous chicks.—R. P. J.

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Mating for Best Results.

In a recent article discussing how to mate fowls for best results, Mr. E. O. Roessle, poultry editor of the Country Gentleman, lays down a few general principles which if well understood may help an amateur. He says:

First, and above all, the most important point is perfect health. A strong, vigorous male bird is half the pen. No other kind must be thought of for a moment. Perfect health in the male is indicated by a brilliant red comb, smooth, glossy plumage and a general strong, vigorous carriage. He should be selected with great care at least a month before he is needed, and well fed and put in breeding condition; but remember always that he must not be fat. Usually a bird in show condition is not in breeding condition; but the prize-winner can easily be put in breeding condition by judicious feeding and plenty of exercise. He must be a bird of few defects, the fewer the better. For example, the best male bird shown in New York or in Boston is usually the best or typical male any pen. But as we cannot all own such a bird, at least make a selection of our own best specimens.

Again, I am a firm believer in size for a male. I do not mean extra large, but a well-grown and well-developed bird. Small, weak immature birds make poor breeders, and beget weak and diminutive chickens. Good legs, large, firm, and which support the body well, are worth considering. It was a very noticeable fact both at Boston and New York this year that many of the prize-winning males had small weak legs. To breed from such birds, unless the fault can be counteracted by strength in females, will prove disastrous in the chickens.

In the females we must look for specimens which are above all things not over fat. After being cooped during the cold, stormy winter, over fat is the rule and not the exception. Fat hens are poor breeders, laying usually small eggs and showing a very poor percentage of fertility. Plenty of green food and exercise will remedy this to a great degree. Here again we want size. I believe in large females, and can never be induced to breed from small ones. Fully developed, fully grown females are the best. This is one reason why so many breeders prefer yearling hens to pullets to breed from. Development means strength, and strength in both males and females means strong chickens. Fine points in the females are important. Good shape is of the greatest importance.

Room in the Poultry-house.

The majority of farmers put too many fowls together in one poultry-house. A house ten by ten feet square should not contain over a dozen large fowls or fifteen small ones. For one hundred hens a house sixteen by sixty feet and divided into two or three apartments will answer. If two apartments are used there will be fifty in a flock, the space being sixteen by thirty feet for fifty

fowls. An excellent plan is a house sixteen by thirty-two feet, divided into two apartments, sixteen by sixteen feet each, with twenty-five hens in each apartment. The space gives ample room for scratching under shelter in winter. An extra shed for scratching will also be appreciated by the hens. It can be built at a small cost and will afford ample room. In summer the fowls can roost under the sheds. The yards should be about ten times the space of the houses, but the larger the better, and the deeper the houses and sheds—that is, depth to the rear, on the ground—the more comfortable the fowls. Each house can have a double yard, so as to change the fowls from one yard to the other. A yard in front and one in the rear is an excellent plan. Each house or shed may also have a window at the rear as well as at the front, if preferred. The best way to estimate how many hens to keep in a building is to multiply the width by the length and divide by ten. For instance, if a house is nine by sixteen feet, multiply the two figures together, making one hundred and forty-four square feet. Divide this by ten, and there is a fraction over fourteen. Do not put more than fifteen hens in such a house.—Farm & Fireside.

THE BANTAMS.

All Cochin and all Game Bantams are the larger varieties in miniature. The shape is the same and also the color. A Cochin Bantam should be the same in general character as the large varieties, and the Game Bantams should be as fine in station and general shape as the large game. It is a difficult matter to bring this about, but when it is accomplished the result well repays one for the efforts expended.

Cochin Bantams that possess the shape and abundance of feather of the best specimens of the larger Cochin, are very scarce, as are also the Game Bantams that possess the general characteristics of the best large Games. But as we have said, when brought up to the quality indicated by the Standard, the results more than compensate one for all the trouble and effort required to bring them about.—Poultry Herald.

Warmth During Incubation.

It requires a certain temperature for a period of time sufficient to permit of the growth of a chick, in order that it may reach a stage which permits it to break the shell and come out. If the hen leaves her nest frequently, thus exposing the eggs, the period of hatching will be extended. When the eggs have been kept at a temperature of 103 degrees the chicks should come out on the twentieth day, but if the eggs have not received sufficient warmth the hatching may not begin until the twenty-first day, and extend into the twenty-second day, in which case the chicks will be weak and more quickly succumb to exposure or irregular feeding.

NOTES.

Fowls require sulphur in some form. Lack of it is said to be a cause for feather eating.

The hen and her chickens should have a board floor for their coop.

Ten hens in a house that is ten feet square, and with yards ten times the size of the house, is a good rule to go by.

Common sense treatment will do more to keep the fowls healthy than all the physic in the world.

Green bone is a good to increase egg production. No poultry farmer should be without it, even the average farmer may find it profitable.

Did it ever occur to you that no matter how much you read about poultry keeping it will do you no good unless you apply the instruction given.

It is a good practice to call the flocks away from their usual runs on the fresh ground to feed them grain. Scatter the grain all about so that the weakest and youngest can get their share.

Do not crowd the chickens in the brooders, for it means death to some of them if not all. Fifty chickens in a roo-chick machine is about the right proportion.

Have the roosts so arranged that they will not become foul from droppings. Make them so that they can be removed easily, or so that they can be painted frequently with lice killers with little trouble.

You must keep your fowls busy. An idle hen gets fat and does not pay. Exercise is necessary to health as well as profit. It is natural for them to exercise and if you prevent it you are disregarding nature's laws.

If you are planning to build a new poultry house this spring, have all the fixtures movable so that they may be taken out and cleaned. This will be a great hindrance to the plans of the lice who are generally on hand to set up housekeeping with the hens.

The laying qualities of the different breeds have been well ascertained by repeated trials and tests. If you are after eggs chiefly, you will, of course, see the importance of keeping only those proved to be the best layers.

Cut bone is an ideal diet for laying hens, and while it requires some labor to produce it, still it is time well spent. At from \$6 to \$10 you can possess a good modern bone cutter and every poultry raiser who keeps even two or three dozen hens will find such a machine nearly paid for at the end of the year in the extra egg crop.

WINTER EGGS.

The secret of winter eggs is comfortable roosting quarters, wholesome food and exercise. No thing equals green cut bone to put an edge on after good grain has been supplied.

Best Place For Turkeys.

The best place to raise turkeys is near a creek bottom where acorns and berries are abundant and the range ample. They will need looking after, but a twelve year old boy on a pony is just the thing for this business. With a little corn to feed them, they may be induced to follow the attendant home by merely riding off, dropping a few grains along the route. After a few attempts there will be no further trouble. They can be rounded up, a few handfuls of corn thrown to them and then start for home, dropping corn as stated, and the turkeys will follow. A few feeds at home at a regular hour will cause them to be "on hand when the horn blows."

Fertility of Eggs.

The fertility of eggs does not depend upon keeping a male with the hens all the time. In fact, it has been considered by some that the best results are obtained when the male is permitted with the hens for only an hour or two during the day, removing him entirely when the time has expired. A single union will fertilize a large number of eggs. This has been demonstrated by experiment. Instances have been recorded in which eggs hatched after the male had been dead for two months and no other male male closer than a mile. We have hatched chicks from eggs laid by hens that had not been with a male for a month. Of course something depends upon the condition of the hens, and the stage of progress of the embryo eggs, but of the exact requirements to insure fertility there is yet much to learn. It is well known, however, that more than one egg is fertilized if the hen is in laying condition; and the necessity of keeping a large number of unproductive males does not exist. Stronger and more vigorous chicks are obtained when the male is not permitted to remain with the hens all the time.

LEGHORNS.

The Leghorn fowl is not regarded by some as a first-class table bird, but the Leghorn has a large proportion of breast meat, and when fat is a fine fowl. The weight of a full grown cockerel averages about five to six pounds, and a hen one pound less. One great advantage the Leghorn has over many fowls is its great hardiness, for it will thrive well in almost any location. Another point in their favor is the early age at which they attain maturity. They grow very rapidly, and cases are known where pullets have commenced to lay when but three and one-half months old. The Leghorn, whether on the farm or with the amateur, is a first-class layer. It is a prolific producer of eggs in the early spring and though the summer, is thoroughly hardy, is an excellent forager and also a non-sitter. It is a very popular variety.—Commercial Poultry.

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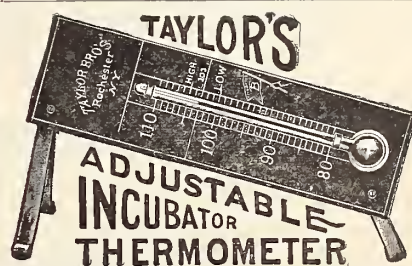
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Standard Poultry Journal
Gravity, Ia.

Keep Eggs Clean.

A Government publication relating to the poultry interests, says: Occasionally a person is found who is habitually made ill by eating eggs just as there are those who cannot eat strawberries or other foods with out distress. Such cases are due to some personal idiosyncrasy, showing that in reality "one man's meat is another man's poison." A satisfactory explanation of such idiosyncrasy seems to be lacking.

Over indulgence in egg, as is the case with other foods, may induce indigestion or other bad effects. Further more, under certain conditions, eggs may be the cause of illness by communicating some bacterial disease or some parasite. It is possible for an egg to become infected with microorganisms, either before it is laid or after. The shell is porous, and offers no greater resistance to micro-organisms, which cause disease than it does to those which cause the egg to spoil or rot. When the infected egg is eaten raw, the micro-organisms, if present are communicated to man and may cause disease. If an egg remains in a dirty nest, defiled with the micro-organisms which cause typhoid fever, carried there on the hen's feet or feathers, it is not strange if some of these bacteria occasionally penetrate the shell, and the egg thus becomes a possible source of infection. Perhaps one of the most common troubles due to bacterial infection of eggs is the more or less serious illness sometimes caused by eating those which are "stale." This often resembles ptomaine poisoning, which is caused not by micro-organisms themselves, but by the poisonous products which they elaborate from materials on which they grow.

Occasionally the eggs of worms, etc., have been found inside hens' eggs, as indeed have grains, seeds etc. Such bodies were doubtless accidentally occluded while the white and shell were being added to the yolk in the egg gland of the fowl.

Judged by the comparatively small number of cases of infection or poisoning, due to eggs, reported in medical literature, the danger of disease from this source is not very great. However in view of its possibility, it is best to keep eggs as clean as possible and thus endeavor to prevent infection. Clean poultry houses, poultry runs and nests are important, and eggs should always be stored and marketed under sanitary conditions. The subject of handling food in a cleanly manner is to seldom thought of, and what is said of eggs in this connection applies to many other foods with even more force.

This is the month that the poultry houses should be carefully watched for lice. Keep the little pests out of the buildings by the use of kerosene or other louse killers. The success of the season's work depends largely upon this one important point. It is also very essential that the setting hens be kept free from vermin. This can be done with insect powder. Don't neglect the work but look after it at once.

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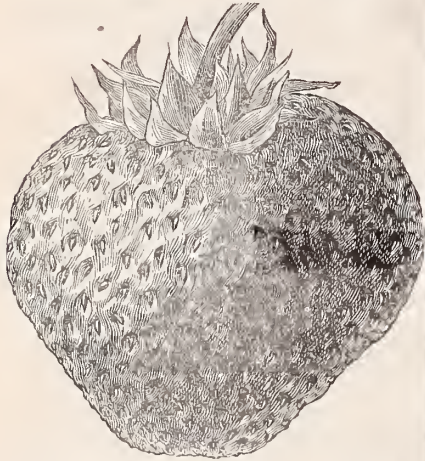
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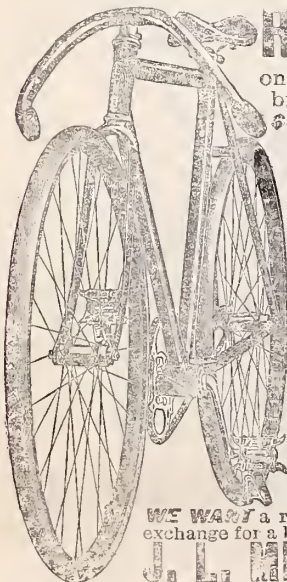
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